UNITED NATIONS

Framework Convention on Climate Change

Distr.
GENERAL

FCCC/CP/1998/5
14 September 1998

Original: ENGLISH

CONFERENCE OF THE PARTIES*
Fourth session
Buenos Aires, 2-13 November 1998
Item 4 (a) (i) and (d) of the provisional agenda

REVIEW OF THE IMPLEMENTATION OF COMMITMENTS AND OF OTHER PROVISIONS OF THE CONVENTION

Approach to comparison of data on greenhouse gas emissions

Note by the secretariat

I. MANDATE

1. At its seventh session, the Subsidiary Body for Implementation (SBI) requested the secretariat to evaluate the feasibility of compiling and maintaining available supplementary data from authoritative sources on greenhouse gas emissions for the purpose of comparison with the national submissions from Annex I Parties and to present a report on this comparison to its ninth session (FCCC/SBI/1997/21, para. 11 (d)).

II. SCOPE OF THE NOTE

2. The note seeks further guidance from the SBI on how to fulfil the mandate outlined in paragraph 1, above. The secretariat understands the mandate to be to evaluate the feasibility of compiling and maintaining supplementary data for the purpose of comparisons with the national submissions, and seeks guidance on further work. The note defines the purpose of comparison of data, referred to below as "data comparison". It addresses the feasibility of the task by discussing the term "supplementary data from authoritative sources". The note further examines the elements that may influence data comparison. Finally, an approach to data comparison is presented and suggestions for further work are provided.

* Including the ninth sessions of the Subsidiary Body for Technological Advice and the Subsidiary Body for Implementation.

III. BACKGROUND

3. Parties are required by Article 12.1 of the Convention to submit their national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol. The Conference of the Parties (COP), at its second session, decided that the national inventory of greenhouse gases from Annex I Parties should be submitted on an annual basis. The revised UNFCCC guidelines for the preparation of national communications from Annex I Parties state that "the transparency of national communications is fundamental to the success of the process for the communication and consideration of information." The guidelines further require information to be presented "in ways that are **consistent, transparent and comparable**" (FCCC/CP/1996/15/Add.1, decision 9/CP.2, emphasis added). These provisions and decisions provide the basis for the approach proposed in this note.

IV. THE PURPOSE OF DATA COMPARISON

4. The current data review process under the Convention includes the in-depth review reports and the compilations and syntheses of national communications and of annual inventory data. The purpose of the review of national communications of Annex I Parties, in accordance with decision 2/CP.1 (FCCC/CP/1995/7/Add.1), is to ensure that the COP " has accurate, consistent and relevant information at its disposal to assist it in carrying out its responsibilities". Corroboration by comparing the data provided in national submissions with data from other sources could support these ongoing processes. It could also serve to:

(a) Identify inadvertent errors, omissions or inconsistencies in the data reported to the COP and thus assist Parties in improving the quality of inventories of greenhouse gas emissions and removals; and

(b) Contribute to the ongoing work on improving methodologies for processing inventory data and provision of comparable information.

V. MEANING OF THE TERM "SUPPLEMENTARY DATA FROM AUTHORITATIVE SOURCES"

5. The term "supplementary data from authoritative sources" in the mandate could be construed in several ways according to how "authoritative" is defined. For example:

(a) Sources maintaining data collected and compiled entirely independently of Parties and hence of their national submissions to the COP; or

(b) Sources maintaining data collected and compiled by Parties for purposes other than reporting to the COP, such as data reported to other international bodies.

6. Completely independent data are rare, since most data are nationally generated. The basic source of data on greenhouse gas emissions is the national submission. Most nominally independent sets of data are, in fact, derived either directly or indirectly from activity data provided by the States themselves. In this sense it is the data submitted by States that are authoritative. For the purpose of data comparison defined in this note, the data sources for the comparison could thus be intergovernmental organizations to which Parties communicate national statistics. For example the United Nations Food and Agriculture Organization, the United Nations Economic Commission for Europe and the International Energy Agency. All of these intergovernmental bodies compile data of a similar type to that used to derive national estimates of greenhouse gas emissions.

VI. ELEMENTS INFLUENCING DATA COMPARISON

7. A number of elements affect the estimation of greenhouse gas emissions, and will influence data comparison:

(a) *The nature of the data.* Greenhouse gas emissions from sources and removals by sinks are not measured directly. Emissions are estimates derived from data concerning the human activities that give rise to emissions (activity data) multiplied by emission factors to give estimated emissions. Differences in activity data and emission factors could contribute to differences on a sectoral basis which prove to be significant or insignificant in relation to the national total greenhouse gas emissions, depending on the scale of the activity or quantity involved;

(b) *Flexibility in methods of estimation.* The Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories encourage Parties to use their own methodologies, data, or emission factors for compiling inventories. Also, they provide default methods, when national data is not available. Parties often, for sound scientific reasons, use emission factors different from those provided by the IPCC and/or other Parties.

8. There are other elements that may affect the accuracy of greenhouse gas emissions' estimates. For example, Parties may have data disaggregated at different levels. This also influences data comparison.

VII. AN APPROACH TO DATA COMPARISON

9. In view of the complexities of estimating greenhouse gas emissions, it would perhaps be appropriate and useful if the data comparison between national submissions and additional sources identified in paragraph 5, above could focus initially on the data elements on which estimates of greenhouse gas emissions are based, in particular, activity data. Activity data derive

from direct measurements of human activities, such as the amount of fuel used and the number of animals kept, whereas emission factors are based on scientific and technical assessments of emissions from different sources, which are subject to revision over time in the light of improved scientific knowledge.

10. Data comparison may first be made in three sectors - energy, industrial processes and agriculture. These sectors cover most greenhouse gas emissions and the supplementary data from authoritative sources are generally available.

11. In addition, as annually submitted inventories have become standard, it would be meaningful for this exercise to include comparisons of changes in activity data and emission factors over time for each Party.

VIII. FURTHER WORK

12. The data comparison could be conducted using the database developed in the secretariat, as well as other electronic data processing means. Such work has been initiated by the secretariat as part of its work to provide information on emission trends and insights into methodological problems (FCCC/SBSTA/1998/7, FCCC/SBSTA/1998/8). The secretariat has not explicitly provided information on changes in activity data and emission factors used for the same year over time.

13. This ongoing work would need to be further strengthened in order to :

(a) Compile activity data available from relevant intergovernmental bodies and compare them with data provided in the national submissions;

(b) Compare changes in activity data and emission factors reported by Parties in national submissions over time.

14. The secretariat invites comments on the proposed approach and guidance on further work. Since there is no provision in the programme budget for the year 1999 for work related to data comparison, the resource implications of any further work by the secretariat would need to be considered in the context of the programme budget for the biennium 2000-2001.

UNITED NATIONS

Framework Convention on Climate Change

Distr.
GENERAL

FCCC/CP/1998/6
22 September 1998

Original: ENGLISH

CONFERENCE OF THE PARTIES*
Fourth session
Buenos Aires, 2-13 November 1998
Item 4 (c) of the provisional agenda

DEVELOPMENT AND TRANSFER OF TECHNOLOGIES (DECISION 13/CP.1)

Progress report on transfer of technology: draft work programme

Note by the secretariat

CONTENTS

		Paragraphs	Page
I.	INTRODUCTION	1 - 10	3
	A. Mandate	1 - 3	3
	B. Scope of the note	4 - 8	3
	C. Possible action by the Subsidiary Body for Scientific and Technological Advice	9 - 10	4
II.	BACKGROUND	11 - 12	5
III.	APPROACH TO THE WORK PROGRAMME	13 - 20	5

* Including the ninth sessions of the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation.

GE.98-63686

Page

Annex

Possible future work programme tasks in relation to relevant decisions of the Conference of the Parties and provisions of the Convention and the Kyoto Protocol 9

I. INTRODUCTION

A. Mandate

1. The articles in the Convention referring to technology and the transfer of technology include the following: Articles 4.1, 4.3, 4.5, 4.7, 4.8, 4.9, 9.2, 11.1, 12.3 and 12.4. The Conference of the Parties (COP), at its first three sessions, adopted decisions 13.CP.1, 7/CP.2 and 9/CP.3,[1] which requested the secretariat, *inter alia*, to provide information on specific topics related to some aspects of technology and the transfer of technology.

2. The SBSTA, at its various sessions, also adopted conclusions on the activities of the secretariat related to technology and technology transfer. The principal elements of the current work programme of the secretariat, as acted upon by the SBSTA, may be found in document FCCC/SB/1997/1. The work programme consists of the following tasks:

(a) Technology inventory database;
(b) Technology transfer activities supported by Annex II Parties;
(c) Technology information centres;
(d) Technology and technology information needs;
(e) Adaptation technology;
(f) Terms of transfer;
(g) New information on technologies and know-how in the research and development stage; and
(h) Private sector technology transfer.

3. The SBSTA, at its eighth session, requested the secretariat to prepare a draft of a work programme on the development and transfer of technology for its ninth session, in consultation with other relevant international organizations and bodies. It also requested the Chairman of the SBSTA to convene informal open-ended consultations on the work programme at its ninth session (FCCC/SBSTA/1998/6, para. 58 (c)).

B. Scope of the note

4. The purpose of this document is to respond to the request of the SBSTA at its eighth session. The document identifies a number of themes (options) that Parties may wish to consider as a means of focusing the work of the secretariat. Each of the themes would require somewhat different modes of work, capabilities and forms of cooperation with other international organizations.

---

[1] For the full texts of decisions adopted by the Conference of the Parties at its first, second and third sessions, see documents FCCC/CP/1995/7/Add.1, FCCC/CP/1996/15/Add.1, FCCC/CP/1997/7/Add.1, respectively.

5. In considering these issues, Parties may also wish to take note of submissions from Parties on this subject (FCCC/CP/1998/MISC.5) and of the technical paper on barriers and opportunities related to the transfer of technology (FCCC/TP/1998/1).

6. This document takes into consideration information available to the secretariat on the activities of other organizations. For example, the operational strategy of the Global Environmental Facility (GEF) has direct relevance to the transfer of technology. Two of the GEF operational programmes aim to remove barriers to improving energy efficiency and energy conservation and to support the adoption of renewable technologies. A third operational programme aims to reduce the long-term costs of low greenhouse gas emitting energy technologies. Also, the IPCC is currently preparing a report on methodologies and technological issues related to technology transfer that will be available in late 1999 and additional information will be available in the Third Assessment Report. Several United Nations organizations, such as the United Nations Development Programme (UNDP), the United Nations Industrial Development Organization (UNIDO), the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Environment Programme (UNEP) have technology or technology information activities. However, the secretariat has not yet held consultations with other organizations. This could be done in concert with the chairman's consultations during the ninth session of the SBSTA.

7. Parties may also wish to bear in mind the preparatory work needed to implement the Kyoto Protocol, since a number of articles refer either directly or indirectly to technology, namely Articles 4, 10, 11, and 12.

8. Parties may also wish to consider the different stages of development of non-Annex I Parties as they review the themes in this document. For example, some countries are at a stage where importing technologies through specific projects is a part of their current strategy to transfer technologies (see FCCC/TP/1998/1). Other countries are actively pursuing privatization and regulatory reforms and have launched significant national technology dissemination programmes. Yet others have promoted long-term strategies of improving education and building internal research and development institutions capable of designing technologies for export. This suggests the importance of developing approaches to technology transfer and the related aspects of the work programme of the secretariat that are appropriate to the particular needs of different countries and, in some cases, regions.

C. Possible action by the Subsidiary Body for Scientific and Technological Advice

9. The SBSTA may wish to take note of this document and provide guidance on the future work programme. It may wish to determine which of the possible themes presented herein, or other themes, should be given priority. The SBSTA may wish to expand or reduce the list of specific tasks and deadlines for inclusion in the preparatory work for the budget of the next biennium. It may also wish to request the secretariat, as it did in the process of developing the

methodology work programme, to prepare papers dealing with the scope of one or more of the themes.

10. The SBSTA may wish to identify a consultative process to promote agreement on key technology and technology transfer concepts among the Parties.

II. BACKGROUND

11. Technology and technology transfer activities have been on the agenda of every session of the SBSTA. Until now, only limited progress has been made in reaching agreement among Parties on key technology concepts, such as What constitutes technology transfer? What are practicable steps, for example under Article 4.5? What are the roles of governments and the private sectors? and How should success be measured?[2] This represents a challenge to the Parties, as they consider their obligations under the Convention, and to the secretariat, as its work programme should find its foundation in such an agreement. Reaching agreement on the above issues would seem to be of fundamental importance. Without this understanding, the activities of the secretariat may not be as responsive as they could be to the needs of the Parties for information.

12. Recognizing that reaching agreement on the above issues may take time, this document takes a practical approach; it invites consideration of a number of themes, consistent with previous mandates, to guide the work programme of the secretariat for the next biennium, even in the absence of complete agreement by the Parties on the above questions. Reaching agreement on the first set of issues, may require the SBSTA to identify a process to reach an understanding among Parties.

III. APPROACH TO THE WORK PROGRAMME

What has the secretariat done?

13. A list of various mandates, tasks issued, existing documents and documents planned for 1999 is provided in the annex. The list focuses on documents, hence it does not reflect supporting activities such as the conduct of expert meetings and the organization of round tables. Also, several tasks have been implemented only partially or delayed. For example, the secretariat undertook the preparation of an initial technology inventory in 1996, but has not proceeded further, pending clarification of issues related to (a) technology information centre(s)

---

[2] For example, currently there are no simple and agreed upon criteria for measuring whether Annex II Parties have met their commitments to transfer technology under the Convention. The UNFCCC guidelines for national communications from these Parties identify formats for reporting financial information. Such information may be viewed as indicative of the amount of technology transferred. The UNFCCC guidelines also request descriptive information about government and private sector projects. However, from this information, it is difficult to assess whether an Annex II Party has met its commitment. Developing and reaching agreement on what constitutes "success" might be an important issue for the Parties to consider.

and networks. If such a centre, or centres, were initiated, then it may be appropriate for this function to be closely linked to or undertaken by such a centre. If no centre is established, then the secretariat will expand its activities to include this task. Other tasks have been awaiting the recruitment of staff, for example, the compilation of new information on technologies and know-how in the R&D stage.

14. It may be important to reiterate that it is requests from the SBSTA which determine what the secretariat does, and does not do. In this regard, it does not undertake research and development activities, demonstrations or project implementation. The secretariat does collect, analyse and synthesize information on special topics submitted by Parties or other sources, consults and provides advice to other organizations on matters related to project preparation, attempts to catalyse initiatives or activities of others, and communicates information on technology needs to Annex I Parties and other organizations.

What could be the focus of the future work of the secretariat?

15. While the existing mandates provide a solid basis for the continuing work of the secretariat, the various tasks could proceed in different directions depending upon the interest of the Parties. In this regard, the secretariat suggests three themes for consideration, not as a substitute for the existing tasks, but as a means of focusing them. Each theme would, however, imply slightly different roles and methods of work. The themes are:

(a) Assessing the experiences of developed countries;

(b) Synthesizing and assessing information on emerging technologies; and

(c) Building capacity among Parties to enhance the transfer of technology.

Why these themes?

16. The above themes reflect a number of decisions adopted by the COP and conclusions reached by the SBSTA. The first theme, that is, "assessing the experiences of developed countries", has a basis in decision 13/CP.1, which requests "an itemized progress report ... on concrete measures taken by Parties listed in Annex II to the Convention, with respect to their commitments related to the transfer of environmentally sound technologies ..." This is further elaborated upon in decision 7/CP.2, in which the Conference of the Parties decided to review the implementation of Article 4.5 and 4.1(c) of the Convention, at each session of the COP. The second theme, that is, "synthesizing and assessing information", has as a basis decision 9/CP.3 which calls upon the secretariat to "synthesize and disseminate information on environmentally sound technologies and know-how conducive to mitigating and adapting to climate change". The final theme also relates to decision 7/CP.2, and in particular to decision 9/CP.3, which requests the secretariat "to consider specific case studies, as part of its work on terms of transfer of technologies, ... with the aim of evaluating barriers to the introduction and implementation of

environmentally sound technologies and know-how, and of promoting their practical application".

How could these themes be addressed and elaborated upon?

Assisting with reviews of implementation

17. The objective would be to assess the experiences and lessons learned in the promotion and transfer of technology by developed country Parties nationally, regionally and multilaterally. The theme could be elaborated upon by pursuing a number of tasks such as a review of technologies implemented through AIJ programmes, analysis of technologies implemented through GEF programme strategies, special reviews of technology transfer activities of Annex II Parties, including their private sector, and a special report on investment trends in Annex I Parties, building on FCCC/1997/TP/1 and the work of the Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD). The work could be conducted with teams of experts. The products would be a series of documents for consideration by the SBSTA and/or the SBI.[3]

Synthesizing and assessing information on emerging technologies

18. The objective would be to make available information on technologies for consideration in the preparation of national communications, to support an iterative process of identifying technology needs, or for consideration in any process developed to implement the Kyoto Protocol. This work could build on current efforts of the secretariat to prepare technical papers on coastal zone and other adaptation technologies. Emphasis would be given to developing information on and assessing technologies in the R&D stage. Information on other stages of technology diffusion and on technology trends could also be included. As information becomes available, it could be put into the technology inventory and provided to information centres. The tasks would require the substantial involvement of experts from industry, specialized national institutes and other international organizations. While some of the work could be done through expert meetings organized by the secretariat, many activities would need to be done in cooperation with other organizations. The products would be a series of reports on specific technologies for consideration by the SBSTA.[4]

---

[3] The specific tasks that would be given emphasis are: technology transfer activities supported by Annex II Parties, terms of transfer, and private sector technology transfer (see paragraph 2 (b), (f) and (h) above).

[4] The specific tasks that would be given emphasis are: technology inventory database, adaptation technology; and new information on technologies and know-how in the research and development stage (see paragraph 2 (a), (e) and (g) above).

Building capacity among Parties to enhance the transfer of technology

19. If this theme were given priority, the secretariat would play primarily a catalytic or facilitative role. The work would need to be designed to complement activities in other international organizations, such as the GEF, UNDP and UNIDO, as well as national organizations. The objective would be to build on the current efforts of the secretariat to identify technology needs and to assess barriers and success stories related to the transfer of technology. It would focus on building capacity in developing countries to overcome institutional, financial, and information barriers specifically related to adapting, absorbing and upgrading environmentally sound climate change technologies and know-how, and on improving the exchange of information among developed countries related to measures to promote technology transfer.[5] The activities could include a series of workshops or training sessions (see document FCCC/TP/1998/1 for more information on barriers and opportunities). The design of the secretariat's activities would also need to be altered. For example, documents for sessions might be de-emphasized while training materials might be enhanced.[6]

Questions Parties may wish to consider

20. In considering the above themes, Parties may wish to consider the following questions:

(a) Will the themes and associated tasks assist the Parties in meeting their obligations under the Convention and contribute to its objective?

(b) Are there other themes that warrant consideration?

(c) Which theme should be given priority?

(d) Which themes and associated activities should be addressed by the secretariat and/or by other organizations?

---

[5] It would exclude generic barriers, such as macro-economic and political barriers having broad national policy implications.

[6] The particular tasks that would be given emphasis are: technology transfer activities supported by Annex II Parties; technology information centres, technology and technology information needs; and terms of transfer (see paragraph 2 (b), (c), (d) and (f), above).

Annex

Possible future work programme tasks in relation to relevant decisions of the Conference of the Parties and provisions of the Convention and the Kyoto Protocol

Existing tasks identified in FCCC/1997/INF.1	Mandate COP decision/Convention/Protocol	Documentation
Technology transfer activities supported by Annex II Parties	• Decision 13/CP.1 • Decision 9/CP.2 (Communications from Parties included in Annex I to the Convention: guidelines, schedule and process for consideration) • Convention: Articles 4 and 12 (Provisions concerning communication of information related to implementation) • Kyoto Protocol: Article 10 (b) (Provisions concerning communication of information related to implementation)	• FCCC/SBI/1996/5 • FCCC/CP/1996/12/Add.1 • FCCC/SBSTA/1997/13 • FCCC/CP/1998/11 and Add.1
Technology and technology information needs	• Decision 7/CP.2 • Convention: Article 4.9 • Kyoto Protocol: Article 12.4	• FCCC/SB/1997/1 • FCCC/SBSTA/1998/INF.5
Terms of transfer	• Decisions 13/CP.1, 7/CP.2, and 9/CP.3 • Kyoto Protocol: Article 10	• FCCC/TP/1997/1 • FCCC/TP/1998/1 • FCCC/SB/1997/3 • FCCC/SB/1997/4
Technology inventory database	• Decisions 13/CP.1, and 7/CP.2	• FCCC/SBSTA/1996/4 • FCCC/SBSTA/1996/4/Add.1 • FCCC/SBSTA/1996/4/Add.2 ▸ Future paper pending COP 4 decision on centres
Technology information centres	• Decisions 7/CP.2 and 9/CP.3	• FCCC/SB/1997/4 • FCCC/SBSTA/1997/10 • FCCC/SBSTA/1998/INF.2 ▸ Future paper pending COP 4 decision

Possible future work programme tasks in relation to relevant decisions of the Conference of the Parties and provisions of the Convention and the Kyoto Protocol (continued)

Existing tasks identified in FCCC/1997/INF.1	Mandate COP decision/Convention/Protocol	Documentation
Adaptation technology	• Decision 7/CP.2 (on reports related to adaptation technology), 3/CP.3 (on adaptation methods) • Convention: Articles 2 and 4 • Kyoto Protocol: Articles 10 and 12	• FCCC/TP/1997/3 ▸ A technical paper on coastal zone technologies will be available for SBSTA 10 ▸ Another paper on adaptation technology is planned for SBSTA 11
New information on technologies and know-how in the R&D stage	• Convention: Article 9.2 (c) • Kyoto Protocol: Article 2.1 (a) (iv)	▸ A technical paper is planned for 1999
Private sector technology transfer activities	• Decision 9/CP.3	▸ A technical paper on the role of the private sector in developing and promoting clean technologies including problems and prospects (See FCCC/SBSTA/1997/6)
Progress reports on development and transfer of technology		• At the fourth session the secretariat presented a verbal Report • FCCC/SB/1997/1 (fifth session) • FCCC/SB/1997/3 (sixth session) • FCCC/SB/1997/4 (sixth session) • FCCC/SBSTA/1997/10 (seventh session) • FCCC/SBSTA/1998/5 (eighth session)

Documents developed by other organizations with the cooperation of the secretariat:

- Pilot Information Needs Survey Regarding Climate Relevant Technologies, IVAM Environmental Research, University of Amsterdam. February 1997.
- Transfer of Environmentally Sound Technologies and Practices Under the Climate Convention (Survey of needs, experiences and opportunities across non-Annex II Parties), IVAM, University of Amsterdam. 1998.
- Preliminary Review of Existing Technology Information Centers and Networks Supporting GHG Mitigation in Developing and Transition Countries, Climate Technology Initiative (CTI) Task Force 3, 16 October 1997.

▸ Indicates ongoing and planned activities for 1999.

- - - - -